

In the Claims:

Without prejudice or surrender of any subject matter, please amend the Claims as follows:

1. (Currently Amended) A modular wide-range microwave communications unit comprising:

a precalibrated IF module having IF circuitry and an IF module memory ~~operable~~operative for storing calibration values for the IF circuitry; and  
at least one precalibrated RF module having RF circuitry and an RF module memory ~~operable~~operative for storing calibration values for the RF circuitry.

2. (Currently Amended) The modular wide-range microwave communications unit of claim 1, wherein the at least one precalibrated RF module includes an RF transmit module with the RF circuitry therein including RF transmit circuitry and wherein the RF module memory includes an RF transmit module memory ~~operable~~operative for storing calibration values for the RF transmit circuitry.

3. (Currently Amended) The modular wide-range microwave communications unit of claim 1, wherein the at least one precalibrated RF module includes an RF receive module with the RF circuitry therein including RF receive circuitry and wherein the RF module memory includes an RF receive module memory ~~operable~~operative for storing calibration values for the RF receive circuitry.

4. (Previously Presented) The modular wide-range microwave communications unit of claim 1, wherein the precalibrated IF module further comprises IF transmit circuitry with a plurality of IF transmit attenuators, IF receive circuitry with a plurality of IF receive attenuators, and a processor adapted to control the IF transmit circuitry based on calibration values for such circuitry stored in the IF module memory and to control the IF receive circuitry based on calibration values for such circuitry stored in the IF module memory.

5. (Currently Amended) The modular wide-range microwave communications unit of claim 1, further comprising a radio processing unit which includes the precalibrated IF module, the at least one precalibrated RF module, and a signal processing unit with a modem that is ~~operable~~operatively coupled to the radio processing unit.

6. Withdrawn.

7. (Currently Amended) A modular wide-range microwave communications unit comprising a plurality of precalibrated modules at least one of which being a precalibrated RF module, each of the plurality of precalibrated modules having a module memory ~~operable~~operative for storing calibration values for configuration and operation of circuitry within such precalibrated module, wherein the module memory of the precalibrated RF module is ~~operable~~operative for storing calibration values for RF circuitry within the precalibrated RF module.

8. (Currently Amended) The modular wide-range microwave communications unit of claim 7, wherein in the plurality of precalibrated modules the precalibrated RF module includes an RF transmit module in which the RF circuitry includes RF transmit circuitry and wherein the module memory in the precalibrated RF module includes an RF transmit module memory ~~operable~~operative for storing calibration values for the RF transmit circuitry.

9. (Previously Presented) The modular wide-range microwave communications unit of claim 8, wherein the RF transmit circuitry comprises an attenuator, an IF detector and an RF detector, and wherein the calibration values stored in the RF transmit module memory include calibration values for the attenuator and the IF and RF detectors.

10. (Currently Amended) The modular wide-range microwave communications unit of claim 7, wherein in the plurality of precalibrated modules the precalibrated RF module includes an RF receive module in which the RF circuitry includes RF receive circuitry and wherein the module memory in the precalibrated RF module includes an RF receive module memory ~~operable~~operative for storing calibration values for the RF receive circuitry.

11. (Previously Presented) The modular wide-range microwave communications unit of claim 10, wherein the RF receive circuitry comprises an attenuator and wherein the calibration values stored in the RF receive module memory include calibration values for the attenuator.

12. (Previously Presented) The modular wide-range microwave communications unit of claim 7, wherein the plurality of precalibrated modules further includes a precalibrated IF module comprising IF transmit circuitry, IF receive circuitry and a processor, wherein the module memory in the precalibrated IF module includes an IF module memory, and wherein the processor is operably configured to control the IF transmit circuitry and receive instructions for controlling the IF receive circuitry based on IF transmit calibration values and IF receive calibration values stored in the IF module memory.

13. (Currently Amended) The modular wide-range microwave communications unit of claim 7, wherein in the plurality of precalibrated modules the precalibrated RF module includes an RF transmit module having an RF transmit circuitry portion of the RF circuitry and an RF receive module having an RF receive circuitry portion of the RF circuitry, wherein the module memory in the precalibrated RF module includes an RF transmit module memory ~~operable~~operative for storing calibration values for the RF transmit circuitry portion and an RF receive module memory ~~operable~~operative for storing calibration values for the RF receive circuitry portion.

14. (Currently Amended) The modular wide-range microwave communications unit of claim 7, wherein the plurality of precalibrated modules further includes a precalibrated IF module that includes IF transmit circuitry with a first digital attenuator operatively coupled to a first analog attenuator, a first mixer operatively coupled to the first analog attenuator, a second analog attenuator coupled to the first mixer, a second digital attenuator coupled to the second analog attenuator, and a transmit IF AGC coupled between the first digital and first analog attenuators, and wherein the module memory in the precalibrated IF module is ~~operable~~operative to store calibration values for the attenuators of the IF transmit circuitry.

15. (Currently Amended) The modular wide-range microwave communications unit of claim 7, wherein the plurality of precalibrated modules further includes a precalibrated IF module that includes IF receive circuitry with a receive RSSI detector, a plurality of receive attenuators, a mixer, a further attenuator and a receive AGC detector ~~operably~~operatively coupled in a manner where the receive RSSI detector is ~~operably~~operatively coupled to the plurality of receive attenuators, the plurality of receive attenuators are ~~operably~~operatively coupled to the mixer, the mixer is ~~operably~~operatively coupled to the further attenuator, and the further attenuator is ~~operably~~operatively coupled to the receive AGC detector, and wherein the module memory in the precalibrated IF module is ~~operable~~operative to store calibration values for the plurality of receive attenuators and further attenuator of the IF receive circuitry .

16. (Currently Amended) The modular wide-range microwave communications unit of claim 10, further comprising:

a radio processing unit which includes the plurality of precalibrated modules one of which being a precalibrated IF module and another being the precalibrated RF module; and

a signal processing unit having a modem and ~~operably~~operatively coupled to the radio processing unit.

17 - 28. Withdrawn.

29. (Previously Presented) The modular wide-range microwave communications system of claim 13, wherein the plurality of precalibrated modules further include a precalibrated IF module having:

transmit IF circuitry,

receive IF circuitry,

an IF module memory for storing IF calibration values for the transmit and receive IF circuitry, and

a processor operably configured to execute instructions including transmit instructions for controlling the transmit IF circuitry and circuitry of the RF transmit circuitry portion based on the IF calibration values and calibration values for the RF transmit circuitry portion and receive instructions for controlling the receive IF circuitry and circuitry of the RF receive circuitry

portion based on the IF calibration values.

30. (Currently Amended) A precalibrated RF module ~~operable~~operative in a modular wide-range microwave transceiver, the precalibrated RF module comprising:

one or both of

a precalibrated RF transmit module having an RF transmit module memory for storing RF transmit calibration values for circuitry of the precalibrated RF transmit module, wherein the precalibrated RF transmit module is configured to operatively interact with a precalibrated transmit IF module having transmit IF circuitry, a transmit IF module memory for storing transmit IF calibration values and a transmit processor ~~operably~~operatively configured to control the transmit IF circuitry and circuitry of the precalibrated RF transmit module based on transmit IF calibration values and on RF transmit calibration values, and

a precalibrated RF receive module having an RF receive module memory for storing RF receive calibration values for circuitry of the RF receive module, wherein the precalibrated RF receive module is configured to operatively interact with a precalibrated receive IF module having receive IF circuitry, an receive IF module memory for storing receive IF calibration values for the receive IF circuitry, and a receive processor operably configured to control the receive IF circuitry and circuitry of the RF receive module based on the receive IF calibration values and RF receive calibration values.

31. (Previously Presented) The modular wide-range wireless communications unit of claim 30, further comprising:

a precalibrated IF module comprising memory for holding IF transmit calibration values, the precalibrated transmit IF module and the precalibrated receive IF module, wherein an IF module memory forms both the transmit IF module memory and the receive IF module memories, and an IF module processor forms both the transmit processor and the receive processorsprocessor.

32. (Previously Presented) A modular wide-range wireless communications unit, comprising:

an IF/radio processing card (IF/RPC) module including precalibrated IF transmit circuitry, precalibrated IF receive circuitry, a telemetry circuit, a memory for holding calibration values associated with the IF transmit and receive circuitries, a processor adapted to control respective configuration and operations of the IF receive and transmit circuitries based on their associated calibration values and based on control signaling received via the telemetry circuit;

a transmitter module operatively coupled to the IF/PRC module from which it receives IF transmit signals, the transmit module including precalibrated RF transmit circuitry for converting IF to RF transmit signals;

a transmit memory for holding calibration values associated with the transmitter module;

a receiver module operatively coupled to the IF/RPC module to which it sends IF receive signals, the receiver module including precalibrated RF receive circuitry for converting RF to IF receive signals;

a receive memory for holding calibration values associated with the receiver module; and

an antenna coupling module operatively interfaced with the transmitter and receive modules.

33. (Previously Presented) The modular wide-range wireless communications unit of claim 32, further comprising a power amplifier module interposed between the antenna coupling module and the transmitter module.

34. (Previously Presented) The modular wide-range wireless communications unit of claim 32, further comprising a synthesizer module operatively coupled to the IF/RPC module.

35. (Previously Presented) The modular wide-range wireless communications unit of claim 32, wherein the transmitter module includes a monolithic microwave transmitter IC.

36. (Previously Presented) The modular wide-range wireless communications unit of claim 32, wherein the receiver module includes a monolithic microwave receiver IC.

37. (Previously Presented) The modular wide-range wireless communications unit of claim 32, wherein, together, the IF/RPC and transmitter module form a transmit path and,

together, the receiver module and IF/RPC form a receive path, and wherein the control signaling received via the telemetry circuit includes commands from a remote signal processor unit to adjust frequency and modulation settings within transmit and receive paths, respectively.

38. (Previously Presented) The modular wide-range wireless communications unit of claim 32, wherein the memory of the IF/RPC module and the transmit memory include calibration tables for the calibration values including transmit power attenuation values.

39. (Previously Presented) The modular wide-range wireless communications unit of claim 38, wherein the transmit power attenuation values correlate to modulation settings and temperature values.

40. (Previously Presented) The modular wide-range wireless communications unit of claim 38, wherein each of the IF and RF transmit circuitries includes one or more attenuators controllable by the transmit power attenuation values.

41. (Previously Presented) The modular wide-range wireless communications unit of claim 32, wherein each of the IF and RF receive circuitries includes one or more attenuators activation and control of which is controllable by the calibration values contained in the memory of the IF/RPC and receive memory.